

CLAIMS :

1. A CVD system provided with a plasma generator having a plasma generation chamber separated from a film deposition chamber in which a substrate is arranged, wherein a material gas is directly supplied into the film deposition chamber, radicals in the plasma are introduced into the film deposition chamber from the plasma generator through introduction holes, and a thin film is deposited on the substrate, said CVD system further comprising:

a cleaning gas feeder provided to said plasma generator, wherein a cleaning gas is introduced through said cleaning gas feeder to produce plasma in the plasma generator and generate radicals, and the radicals are introduced through said introduction holes to said film deposition chamber to strike the substrate and thereby clean the substrate.

2. A CVD system as set forth in claim 1, wherein said cleaning gas is a gas selected from O₂, H₂, F₂, N₂, dilute gas, and halide gas or a gas comprised of a suitable mixture of the plural gases.

3. A substrate cleaning method comprising:
depositing a silicon-based film on a substrate,
converting the silicon-based film to a crystalline silicon
film by laser annealing,

depositing a gate insulating film on said crystalline film by a CVD system comprised of a separate film deposition chamber and plasma generation chamber,

generating plasma by use of a cleaning gas in said CVD system

at a stage before forming the gate insulating film and emitting only the radicals in the plasma on the crystalline silicon film to clean its surface.

4. A substrate cleaning method as set forth in claim 3, wherein said cleaning gas is a gas selected from O_2 , H_2 , F_2 , N_2 , dilute gas, and halide gas or a gas comprised of a suitable mixture of the plural gases.

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